AMENDMENTS TO THE DRAWINGS

The attached Replacement Sheet includes changes to FIG. 11. This Replacement Sheet replaces the original sheet containing FIG. 11. Applicant has amended FIG. 11 to add a "PRIOR ART" legend to the drawing.

Attachment: One (1) Replacement Sheet - amended FIG. 11

REMARKS

In the Office Action[1], the Examiner objected to the title of the invention; objected to the drawings; rejected claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by *Rallison et al.* (U.S. Patent No. 5,991,085); and rejected claims 2, 3, 5, and 6 under 35 U.S.C. § 103(a) as being unpatentable over *Rallison* in view of *Foxlin* (U.S. Patent No. 5,645,077).

By this Amendment, Applicant amends the title, amends FIG. 11, amends claims 1, 2, 4, and 5, and cancels claims 3 and 6, without prejudice or disclaimer. Claims 1, 2, 4, and 5 are pending. Of these claims, claims 1 and 4 are independent.

Applicant has amended the title of the invention to recite, "HEAD-TRACKING METHOD AND DEVICE WITH ANGLE CORRECTION." Applicant therefore requests that the objection to the title be withdrawn.

The drawings stand objected to under M.P.E.P. § 608.02(g). Applicant has amended FIG. 11 to add a "PRIOR ART" legend to the drawing. Applicant therefore requests that the objection to the drawings under M.P.E.P. § 608.02(g) be withdrawn.

Applicant respectfully traverses the rejection of claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by *Rallison*. Claims 1 and 4 patentably distinguish over *Rallison* at least for the reasons set forth below.

Independent claim 1 recites a head-tracking method for detecting three-dimensional movement of the head using three axes as points of reference, an x-axis extending in a right-to-left direction of the head, a y-axis extending in a front-to-back

[1] The Office Action contains characterizations of the claims and the related art with which Applicant does not necessarily agree. Unless expressly noted otherwise, Applicant declines to subscribe to any statement or characterization in the Office Action.

direction of the head, and a z-axis perpendicularly traversing a horizontal surface of the head, the method comprising calculating a yaw angle from an integral value of an output of a gyro sensor; calculating both a pitch angle and a roll angle from an output of a two-axis tilt sensor; and correcting the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle.

Independent claim 4 recites a head-tracking device for detecting three-dimensional movement of the head using three axes as points of reference, an x-axis extending in a right-to-left direction of the head, a y-axis extending in a front-to-back direction of the head, and a z-axis perpendicularly traversing a horizontal surface of the head, comprising a gyro sensor for detecting a yaw angle; a two-axis tilt sensor for detecting both a pitch angle and a roll angle; and calculation means for calculating the yaw angle, the pitch angle, and the roll angle, wherein the calculation means performs a correction of the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle.

Rallison discloses a visual display device for delivering a generated image, preferably combinable with environmental light, to the eye of a user. The device can be comfortably mounted to the user's head while still allowing for use of conventional eyeglasses. A tracker for outputting an indication of the orientation, altitude and/or position of a head-mounted display (HMD) may be provided. In one embodiment, the tracker uses magnetic sensors. In another embodiment, one or more inertial sensors, such as a rate gyro and/or accelerometers are used. (*Rallison*, Abstract).

Rallison, however, does not disclose a two-axis tilt sensor for detecting both a pitch angle and a roll angle. Rather, as illustrated in FIGs. 25A-2 and 25C, and

discussed in col. 20, lines 38-57, two separate pitch-tilt and roll-tilt sensors are provided. "[P]itch and roll are sensed respectively by accelerometers 562*a* and 562*b* . . . " Furthermore, *Rallison* fails to disclose correcting a yaw angle calculated from an output of a gyro sensor using a calculated pitch angle and roll angle.

Accordingly, *Rallison* fails to teach or suggest the claimed head-tracking method, comprising: "calculating a yaw angle from an integral value of an output of a gyro sensor . . . ; calculating both a pitch angle and a roll angle from an output of a two-axis tilt sensor . . . ; and correcting the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle," as recited in claim 1. Similarly, *Rallison* fails to teach or suggest the claimed head-tracking device, comprising: "a gyro sensor for detecting a yaw angle . . . ; a two-axis tilt sensor for detecting both a pitch angle and a roll angle . . . ; and calculation means for calculating the yaw angle . . . and the pitch angle and the roll angle . . . , wherein the calculation means performs a correction of the yaw angle calculated from the output of the gyro sensor using the calculated pitch angle and roll angle," as recited in claim 4. Applicant therefore requests that the rejection of claims 1 and 4 under 35 U.S.C. § 102(b) be withdrawn.

Applicant respectfully traverses the rejection of claims 2, 3, 5, and 6 under 35 U.S.C. § 103(a) as being unpatentable over *Rallison* in view of *Foxlin*. Applicant submits that the rejection of claims 3 and 6 has been rendered moot by the cancellation of claims 3 and 6. Furthermore, the deficiencies of *Rallison* are described above.

With respect to *Foxlin*, the Examiner alleges, "Foxlin (Fig. 1) discloses wherein the yaw angle (104) judged from the output of the gyro sensor . . . is corrected (108) using the judged pitch angle and roll angle . . . " (*Office Action*, p. 5, ll. 14-16).

Applicant respectfully disagrees. The drift compensation module 108 in *Foxlin* fails to teach or suggest correcting a yaw angle using calculated pitch and roll angles. Thus, *Foxlin* also fails to overcome the above noted shortcomings of *Rallison*, and claims 2 and 5 are allowable at least due to their corresponding dependence from independent claims 1 and 4.

Applicant respectfully submits that claims 1, 2, 4, and 5 are in condition for allowance. Applicant therefore requests reconsideration of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: May 21, 2008

By: 
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Attachment: One (1) Replacement Sheet with amended FIG. 11